IDS Bulletin

Transforming Development Knowledge

Volume 47 | Number 6 | December 2016

ENGAGED EXCELLENCE

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Learning about 'Engaged Excellence' across a Transformative Knowledge Network

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Abstract The 'Pathways' transformative knowledge network is an international group of research organisations, collaborating to explore processes of social transformation and to share insights across disciplines, cultures and contexts. Working across the domains of food, energy and water, the network is experimenting with new methods of research and engagement that both help to understand – and contribute to – transformations to sustainability. This article outlines some of the early experiences of two hubs in the network (UK and Argentina) and reflects on the lessons learned for 'engaged excellence'. It also describes how approaches to transdisciplinary research (building on a diversity of academic and non-academic traditions) vary across different contexts, and how wider lessons in this regard will be shared across the consortium into the future.

Keywords: engaged excellence, transdisciplinary research, Argentina, UK, seeds, agriculture.

1 Introduction

The Sustainable Development Goals (SDGs) agenda requires new forms of innovation that combine social and technological change, and research that is capable of understanding and fostering such change across nested and interlinked systems. This article introduces the early experiences of the 'Pathways' transformative knowledge network – one of the activities of the Pathways to Sustainability Global Consortium (http://steps-centre.org/about/global/) – that aims to respond to these requirements. It discusses how the network draws upon insights from various traditions in science and technology studies, development studies and innovation studies to appreciate and contribute to transformative social–technological–environmental change in different country contexts. It points to the value of such international collaborations for learning from the knowledge and literatures from regions in the global South, and adopting a flexible approach to transdisciplinary methods as they are applied in different contexts. The article then reflects on how this ongoing research articulates with

The *IDS Bulletin* is published by Institute of Development Studies, Library Road, Brighton BN1 9RE, UK
This article is part of *IDS Bulletin* Vol. 47 No. 6 December 2016: '**Engaged Excellence**'; the Introduction is also recommended reading.

ambitions for 'engaged excellence' and how this might be organised and operationalised across a diverse international network.

2 Transformative pathways to sustainability

Researchers have – for decades – recognised that the urgency and scale of sustainability challenges requires *systemic* changes (Schot, Brand and Fischer 1997; Elzen, Geels and Green 2004) across society, rather than merely individual technological innovations or eco-efficiency. The universality and interconnectedness of the SDGs (Nilsson, Griggs and Visbeck 2016) means that this realisation is even more profound, and requires approaches that can also bridge notions of sustainable development from global to local levels (Steffen *et al.* 2015; Leach *et al.* 2012). Numerous traditions in the international literature have tried to address these challenges; however, in the interests of brevity we will focus on those we have drawn upon most strongly, beginning with the pathways approach (Leach, Scoones and Stirling 2010).

A pathway is defined as 'the particular directions in which interacting social, technological and environmental systems and their contexts co-evolve over time' (Leach *et al.* 2010). The pathways approach has been used to understand how power can shape knowledge about those systems and how this can influence the direction of change. The role that technological innovation and social change has played in these processes has been studied with respect to energy (Byrne *et al.* 2014), agri-food (Marin and van Zwanenberg 2015) as well as across these (Cavicchi and Ely 2016) and other domains. Drawing attention to alternative pathways (and their associated knowledges) rather than continuing to focus on dominant, locked-in pathways has delivered novel insights and opened up policy debates to options which may offer environmental and social benefits. For example, work in East Africa has drawn attention to different farmers' perspectives around nine possible alternative pathways (associated, for example, with high value crops, alternative staples and locally improved seed), opening up the dominant focus on improved varieties and maize productivity in food security debates (Brooks *et al.* 2009).

Scholarly approaches to understanding such processes of social transformation date back at least as far as Polanyi (1944), whose ideas of (double) movements and fictitious commodities have since been taken forward by writers such as Fraser (2014) in explaining contemporary ecological, social and financial crises. The more recent literature on socio-technical transitions (Elzen *et al.* 2004; Grin, Rotmans and Schot 2010) has provided a wealth of historical analysis on systemic changes that have occurred over the past two centuries, and offered approaches to influencing such processes through transition management. For example, Kern and Howlett (2009) have investigated how different policy instruments (taxation, voluntary certification schemes, information instruments, subsidies, etc and mixes thereof) have been applied to drive change in the Dutch energy system. Under such perspectives and depending on the stage of the transition, the role of

government is seen as a plural one of facilitator, stimulator, controller or director (Kemp and Rotmans 2005). In comparison to such 'controlled' transitions, Stirling points to transformations as 'more plural, emergent and unruly political re-alignments, involving social and technological innovations driven by diversely incommensurable knowledges, challenging incumbent structures and pursuing contending (even unknown) ends' (Stirling 2015: 1). Under this perspective, the role of government is less central, and greater agency (sometimes in adversarial relations with government) is attributed to civil society.

These various concepts can help us not only to understand transformative social–technological–environmental change as it has unfolded in the past, but also how they inform work of transdisciplinary scholars working in different contexts towards the 2030 Agenda. In such a complex sphere, moving from analysis to action means not only identifying (and supporting) alternative pathways, but also challenging incumbency (and the structures with which it is entangled) in contexts where power relations are often highly skewed in favour of unsustainable production and consumption. This may be possible where effective coalitions and alliances are formed (Schmitz 2015), where pressure is exerted 'from below' through social movements (Leach and Scoones 2015), through galvanisation of grass-roots innovation networks (Smith and Ely 2015), through state–business alliances forged around progressive agendas (Mazzucato 2013) or via political pressure through parties, elections and wider democratic forces. But it raises difficult and fundamental questions for networks embedded primarily within academic research organisations.

In seeking transformative pathways, in which directions are potentially unknown (or at least uncertain) but normative commitments are shared, the role of transdisciplinary research becomes one of fostering, supporting or reconfiguring such coalitions and alliances, and working with them to co-construct and mobilise impact-oriented evidence. The aim here is system innovation (with innovation seen as emerging from the recombination of different resources, including knowledge, in new ways, as per Schumpeter 1934). The next section introduces the approach that is beginning to be adopted by the 'Pathways' transformative knowledge network.

3 The 'Pathways' transformative knowledge network

The Transformations to Sustainability programme is coordinated by the International Social Science Council and funded by the Swedish International Development Cooperation Agency (Sida), and represents a contribution to Future Earth.[1] Alongside two others, the programme is supporting the 'Pathways' transformative knowledge network (full title 'Transformative Pathways to Sustainability: Learning across Disciplines, Contexts and Cultures'). The network launched in April 2016 with an inception workshop hosted by the Centre for Research on Transformation (CENIT, Argentina), one of the lead institutions (with the STEPS Centre, UK) in the network. Prior to this, seed funding had already allowed these and other hubs (the African Centre for Technology Studies in Kenya, Jawaharlal Nehru University in India,

Beijing Normal University in China and Arizona State University in the USA) to convene co-design workshops that identified sustainability challenges and shared research priorities amongst knowledge partners convened by each hub. This co-design component, built upon established relationships of research and policy engagement, builds on long traditions of development studies in the Institute of Development Studies (IDS), from where much of the literature on participatory research has emerged (Chambers 2014; Participate 2015) but also science policy and innovation studies (Martin 2012); for example, the role of multiple actors in the production of 'Mode 2' knowledge (Gibbons *et al.* 1994). The growing literature in science and technology studies (STS) (Jasanoff *et al.* 1995; Hackett *et al.* 2007) greatly enhanced our understanding of the social and political dimensions of science and technology, and contributed to more sophisticated notions of engagement and coproduction (Jasanoff 1996; Mauser *et al.* 2013).

Similar scholarly debates took place in Latin America starting in the 1970s and 1980s about what might now be called sustainability or sustainable development. These called for new forms of knowledge requiring broader participation in research and policy processes, which offered novel trajectories of socio-technical change that better responded to local priorities, problems and circumstances (Herrera 1979; Sunkel and Gligo 1981). Concurrent debates that point to the role of science–society interactions and collaboration in India (see e.g. Krishna 2001; Abrol 2005), China (Li, Qi and Xu 2009), and sub-Saharan Africa (Mamdani and Diouf 1994; Urama *et al.* 2010) have all pointed towards ideas that resonate with the 'engaged excellence' agenda (Oswald, Gaventa and Leach, this *IDS Bulletin*), but the real potential for learning from experiences across these different regions has not been realised. Our network attempts to contribute by adopting a consistent but flexible approach across the six regional hubs.

In each hub locality, transformations (processes of deep systemic change) are already ongoing – understood as centred on technologies, market incentives, state-led support or citizen mobilisation (Scoones, Leach and Newell 2015). We aim to further elucidate these processes and – through strategic use of social science research and evidence – help to steer them in more environmentally-sustainable and socially just directions. We will draw on and further develop concepts around social innovation labs (Westley and Laban 2015) to run 'transformation labs' (or T-labs, first experimented with at the Transformations 2015 conference in Stockholm). These will convene different system actors with different resources (e.g. social capital, networks, skills, technical expertise), to provide a safe space in which we try to support novel recombinations and therefore 'bridging innovations' that can contribute to transformative pathways. The selection of actors has been informed by considerations related to 'transformative agency' (Westley *et al.* 2013) but has also been driven by existing partnerships, trust relationships and windows of opportunity in each context. The reasons for these selections in each case have been recorded as part of the research and reflection process.

Beyond two specific events that will punctuate the project in years one and two, the T-labs constitute a multi-stakeholder community of continuous interaction and engagement with the transformative knowledge network hub. Analysis of these engagement processes, and monitoring change over the coming three years will draw on social science literature on the politics and governance of transition processes (Smith, Stirling and Berkhout 2005), the role of knowledge in wider policy processes (Keeley and Scoones 2003), understanding networks and leadership in transformations (Olsson *et al.* 2006) and how different forms of innovations and policy regimes can combine to produce positive and negative outcomes (Ely *et al.* 2013; Fressoli *et al.* 2014). Findings will be shared and discussed throughout the project via a virtual platform offering:

- A document repository for internal and external reports, outputs and for other literature (academic or otherwise) that can support analysis and comparison of the processes occurring in each hub;
- A site for peer review (e.g. of T-lab designs, on the basis of templates shared in advance) and discussion fora, offering opportunities for continuous exchange of ideas and experiences between the different hubs;
- Real-time drafting for the production of co-learning blogs (which will highlight insights emerging from comparisons and collaborative work, facilitated by research exchanges between paired hubs in the network).

Through such a structured process for learning from different disciplines, cultures and contexts across the network, we hope to document and analyse the activities and findings in each region and to strategically enhance our abilities to engage in these systemic changes into the future. In so doing, the network is designed to learn about the concept of 'engaged excellence', at the same time as seeking to practise it.

4 Entry points and opportunities to engage in systemic change

The challenges identified in the hubs are diverse, but fall within the three areas of agriculture and food systems (UK and Argentina), low-carbon energy transitions that serve the needs of the poor (Kenya, China) and sustainable cities (India, USA). For the purposes of this article, we focus on the area of agri-food systems and the activities in the UK and Argentinean hubs. In each case, we have adopted different entry points to engage with the wider (global) agri-food system. These have been defined through co-design workshops which will frame the research and engagement processes going forward. We briefly outline these differences below.

4.1 Transformations towards a sustainable agri-food system in Brighton and Hove (UK)

The UK team have started (locally-bounded) work on a project to help foster a sustainable agri-food system in Brighton and Hove (a city region in the south of England with a population of approximately 300,000), recognising links to the national, European and international levels.

Building on established relationships between researchers and knowledge partners, the co-design workshop convened academics, representatives of local firms (local horticultural producers), growers from a community food initiative and civil society organisations (a city-wide food partnership, a permaculture organisation and a national family-farm advocacy group). Whilst the scale at which these groups worked differed, their interests were largely aligned around the desirability of more environmentally benign agriculture, and more localised production and consumption.

The half-day workshop was structured so as to learn about the ongoing activities of the different groups, to compare their perspectives on the challenge identified and to identify a specific area of research and engagement that could potentially contribute to transformations. The workshop was convened and facilitated by researchers, but attempts were made to limit the prevailing research (and other dominant) voices by splitting into smaller groups and then feeding back individually to the plenary. During the co-design workshop, the group identified the role of medium-sized (family) farmers as bridging some of the benefits of the micro-scale (e.g. health, education, rehabilitation strengths of the community-growing niche) (White and Stirling 2013) with the ability to overcome constraints that urban agriculture faces in supplying cities' demands for vegetables and wider food security (Martellozzo *et al.* 2014). This was seen as an important but little-understood group within the food system, and one for which there was scope for increased support, either by policy or civil society actors. The discussions identified surveys or interviews with small to medium-sized farmers around the city as an appropriate research approach, and the context and discussions were written up and circulated to all participants for comment, prior to publication (STEPS Centre 2015). The focus also raised questions about access and ownership of resources (e.g. land, genetic resources in seed, etc) to enable sustainable food production at sufficient scale.

The co-design workshop identified knowledge gaps around such farmers' growing patterns (especially innovative approaches to agro-ecological farming), and also around new business models that were enabling smaller-scale growers to compete as niches in relation to the dominant agri-food pathways characterised by large farms and vertically-integrated supermarket retail. These included farmdrop or box schemes, as well as a growing number of specialist retailers and restaurants serving the market for locally-produced, sustainable food in the city. Research into these issues could provide useful evidence to policymakers at local and national levels, but also facilitate engagement with growers and other actors in the supply chain to build legitimacy and momentum for the envisaged transformation. The outputs of the co-design workshop were written up in a concept note that scoped out possible strategies for research and coproduction (STEPS Centre 2015).

Building on other work conducted by members of the project team, interviews will initially focus on agro-ecological farmers identified in the area surrounding Brighton and Hove, investigating the policy drivers

and constraints for agro-ecological production and supply, current practices and how actors across the city region could work together to support a higher proportion of locally and environmentally sustainably-produced food in the city region. Following a period of pilot qualitative research interviews in autumn 2016, we convened our first T-lab event in December 2016, refining our research and engagement activities for the subsequent year with similar (and additional) knowledge partners to those who joined the co-design workshop. Further opportunities for engagement are enhanced as a result of the current state of flux in local, regional and national agri-food policies. Brighton and Hove's City Plan 2 is under discussion (with a draft plan due in autumn 2017), providing a perfect window for research-led input. The South Downs National Park (which surrounds Brighton and Hove to the north) is in the process of reformulating its management plan and the UK's food and agricultural policies are entering a period of intense uncertainty and disruption as a result of the referendum vote to leave the European Union ('Brexit'). Building on the engagement to date, the foundation of expertise and research that will be strengthened by the current work will position the team not only to strategically plan our future engagement activities, but also to be adaptable enough to work with normatively-aligned partners at key moments.

4.2 The future of agriculture and seeds in Argentina

The Latin American team have adopted a different entry point to the global agri-food system, but one which has been identified as central to the political economy of the system as a whole (Kloppenburg 2005; Wach 2016). It decided to focus on the future of seeds because that issue provided a window of opportunity to engage with the broader issue of agricultural sustainability, given that Argentina was embroiled in contentious debates about the reform of intellectual property related to seeds (Marin 2015). A new seed law was being discussed, leading to increased political salience/controversy as seeds are a key input for large-scale agricultural production (by far the country's most important export). Argentina was faced with the option of adopting a number of models in their new law, drawing on aspects of the various agreements of UPOV (International Union for the Protection of New Varieties of Plants), as well as potentially novel approaches such as open source seeds (Kloppenburg 2014). There was, therefore, a sense of urgency to discuss the topic, which helped to bring a diverse group of influential people to the table, and as the law is still being discussed there was also, and indeed still is, a perception that the outcomes of the work undertaken in the workshop could have a real influence. In practice, though, the issue also provided a lens through which participants could talk and reflect on desired agricultural futures. The workshop was based on established networks, and a legitimacy built on the basis of years of previous research. A range of actors participated, from academic researchers, representatives of commercial and family farming, government officials, representatives of civil society organisations, national seed firms and other institutions related to seeds – representing many more diverse views than those assembled at the co-design workshop in the UK. This

contentious entry point was used as a lens through which the group could begin to explore future agricultural visions and pathways amongst a varied group of actors, and in the hope of ensuring commitment and engagement from those actors to future work.

The workshop was structured around a 'World Café' debate on four possible scenarios related to changes to the seed law:

1 Preserve the status quo, based on UPOV 1978 which allows saving and utilisation of seed;

2 Restrict the rights of farmers to save seed but retain breeders' rights to use seeds as a basis for further breeding;

3 Retain farmers' rights, but restrict the breeders' exemption to use seeds in varietal improvement; and

4 Restrict both actors' rights as in UPOV 1991.

The participants discussed implications of these scenarios to 2030 for food supply (and social and economic diversity), technological services for industrial farmers, resources for biological research and biodiversity.

Given the diversity of perspectives of the participants, it was expected that there would be divergent views on the issue. Indeed, from the discussions, two distinctive views were identified about the future of seeds and agriculture. One, a macro, nationalistic, market-focused perspective was concerned primarily with enhancing the productivity of large-scale agricultural production, as well as ensuring adequate incentives for the development of local production and technological capabilities (as opposed to reliance on multinational corporations). The other, a state-centred perspective, was concerned primarily with promoting food sovereignty and security, and enhancing the social and economic diversity of farming (including small- and medium-sized independent farmers).

The very different framings of the challenge and the interests at play of the different participants (discussed further in Marin, Ely and van Zwanenberg 2016) explained the lack of general consensus and divergence in views; a political and social reality which is in some respects a hindrance to identifying pathways to sustainability. The considerable empathy shown by almost all participants for the objectives underlying the alternative perspective, however, suggested that there may be scope, in future work, for negotiating novel strategies that satisfy at least some of the key concerns held by both groups. To identify these strategies, the team plan to work on future research with the idea of 'bridging innovations' that might help to address issues of overlapping interest, such as the need to support domestic capabilities in seed development as fundamental to any kind of desired agricultural future (which workshop participants agreed were threatened by strict intellectual property rules). These bridging innovations can be, for instance, new policy proposals that help to shift perspectives about the future of seeds and agriculture.

The mapping of different perspectives in this first co-design workshop, as detailed in a concept note produced following the event (CENIT 2015) will provide the basis for future work. The team in Argentina is proposing to use Q method (Previte, Pini and Haslam-McKenzie 2007) and multi-criteria mapping (Stirling 2006) as novel social science approaches that enable engagement with diverse groups and a structured mapping of their different perspectives that facilitates the 'opening up' of policy discussions. Along with other research already conducted by the CENIT team (Marin and Smith 2012), this will provide new knowledge resources that can recombine with those held by other actors in the system, with the potential to foster social innovation that can help negotiate novel pathways of change around seeds and agriculture in Latin America.

5 Emerging insights and implications for 'engaged excellence'

On the basis of the accounts given previously, the 'Pathways' transformative knowledge network is already delivering early insights with regard to engaged research across disciplines, cultures and contexts. It is also raising questions about the role of researchers pursuing 'engaged excellence' in different contexts across the world, and how the social sciences can work within a transformative SDG agenda.

The collaborative work offers lessons regarding the various challenges of working across aligned and non-aligned networks in co-design (Marin *et al.* 2016) and the kinds of modifications to concepts such as 'social innovation labs' that might be appropriate in each context. Whilst it is clear that researchers can play many roles in attempting to contribute to transformative pathways, the ones emerging from our experiences so far in the two hubs covered in detail here include:

- Providing strategic (impact-oriented) evidence, identified by a range of stakeholders, as filling a crucial knowledge gap or unlocking an impasse caused by seemingly irreconcilable differences in perspective held by different actors;
- Convening diverse actors in order to explore different perspectives, seek to bridge or build consensus between them, or (relatedly) to bring together different resources and foster social innovations that can both address issues of consensus and adequately respond to issues where there is disagreement;
- Building networks to create agile groups that can coproduce knowledge and evidence to inform adaptive management – as the cases of 'Brexit' and the Argentinean seed law illustrate, 'engaged excellence' does not necessarily start from research, but often from established, trusted networks that allow quick, robust and well-informed responses to changing circumstances.

Reflecting on these various roles in turn, it appears that (at least some) stakeholders afford the evidence produced through formal 'research' a validity beyond that held by (or produced by) other actors. It is

necessary to remember this power asymmetry when talking about 'impact-oriented' research, and to recognise the ways in which our own research approach might be influenced by other powerful actors. Likewise, the legitimacy of researchers as convenors (both of aligned and non-aligned groups) requires us to be aware of our limitations as mediators, and requires us to enter processes such as T-labs without predefined goals. This often requires trust relationships/reputations that are built over many years. Retaining some level of flexibility to exploit windows of opportunity is a challenge for researchers, but also for funding organisations with more traditional models of accountability.

The experiences described above are also beginning to identify challenges to practising 'engaged excellence' through this kind of networked approach. Although (as discussed previously) there has been some flexibility afforded to the network, striving to deliver the outputs promised in the proposal has required partners to work to a specified time frame, and to some extent has limited their scope for creativity around methods. Constraints (in terms of the amounts of funding available and time frames) have greatly limited the scope of the research, but also to some extent forced teams to be parsimonious with regard to the project's ambitions – continuing on similar research trajectories (rather than establishing new ones), collaborating with existing trusted partners (whilst reaching out) and working with the grain of (at least some) ongoing transformative changes.

Through project infrastructure such as a virtual platform offering peer review (of T-lab designs) discussion fora, and production of co-learning blogs, the network hopes to extend these initial findings across the other hubs, and to further reflect on experiences within different contexts. At the same time, we will be monitoring (potentially transformative) changes and using the evidence to enhance the direct impact of our activities. Exchanging ideas from the literatures around transdisciplinary work in different regions may also help us to be reflexive about our own assumptions regarding transformation, and to appreciate engagement approaches that may at first seem in conflict with our own. Whilst there are limited opportunities for in-person exchange, the infrastructure (virtual and otherwise) that is integral to the project design allows periodic monitoring and reflection as we operationalise the ideas of transformative pathways to sustainability across our diverse international network. We hope to generate broader lessons that can serve to inform researchers, funders and other actors in the design and implementation of transdisciplinary research for achieving the SDGs.

The opportunities for learning about 'engaged excellence' across the transformative knowledge network also bring an appreciation of how these insights are linked to historical, cultural and contextual factors (as well as how understandings may be conditioned by the situatedness of disciplinary/analytical frameworks). This is incredibly stimulating as an academic exercise. The challenge (which we do not underestimate) will be to convert these insights into useful knowledge for action beyond the

scale of the individual sites in which we are engaging in transdisciplinary work. Our ability to do this in a relatively short three-year programme is necessarily limited, but we will be organising our activities in a way that enables us to learn as much as possible from our experiences – both positive and negative – and to apply these lessons in future work.

Notes

* This work is based on research supported by the Transformations to Sustainability programme, which is coordinated by the International Social Science Council (ISSC) and funded by the Swedish International Development Cooperation Agency (Sida), and implemented in partnership with the National Research Foundation of South Africa (Grant Number ISSC2015-TKN150224114426). We would like to thank the other members of the 'Pathways' transformative knowledge network for the conversations that have led us to these insights, who are too numerous to include as co-authors or name individually. However, we also wish to note that we have produced this article without consulting all these partners, and therefore bear sole responsibility for any errors or omissions.

1 Launched in 2015, Future Earth is a ten-year initiative to advance Global Sustainability Science, build capacity in this rapidly expanding area of research and provide an international research agenda to guide natural and social scientists working around the world.

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